1853MNRAS..13..186A

Extract of a Letter from the Rev. T. W. Webb to Capt. W. H. Smyth, R.N.

"During the month of April 1852, while I was examining with my $5\frac{1}{2}$-feet achromatic the colour of the star β in this constellation (*Coronæ*), and comparing it with the observation in your most valuable Bedford Catalogue, the remark which you have there made, that this star, though destitute of any Arabic name, is unquestionably the brightest in that asterism, induced me to compare it pretty attentively with its neighbours. I could not, however, at that time, estimate the star in question as the 'lucida'—on the contrary, their order of brightness, to the naked eye, as well as through a common concave eye-glass correcting my near sight, appeared to be evidently γ, δ, β, α. This was on April 13, 1852.

"A subsequent examination, on the night of April 19, in which, however, the concave eye-glass was not employed, confirmed this estimate. I have not as yet repeated the observation during the present season, but shall be interested in finding whether these stars still preserve the same comparative brightness to my eye, and still more in knowing whether you will agree with me; in which case, perhaps, a decrease of light in the star β, or less probably, an increase in the stars γ and δ, may be supposed to have taken place since the date of your observation in 1831.

"While I am on this subject I may, perhaps, mention, that I have found estimates of relative brightness between stars in the same telescope field, where there is no very obvious disparity, facilitated, or at any rate confirmed, by throwing the instrument a little out of focus; since the comparison between disks of sensible magnitude is rather more easy than between mere points: at any rate, there may be some advantage in its being presented to the eye under a fresh aspect. This method, however, appears still more useful in its application to the determination of the absolute brightness of minute bodies presenting visible, but unequal, disks, such as the satellites of *Jupiter*, where differences in apparent magnitude may confuse the accurate perception of intrinsic splendour. Thus, too, the absolute quantity of light emitted by a small planetary disk, or minute nebula, may be compared with that of the surrounding stars, if any suitable for the purpose are comprised in the same field.

"*April* 6, 1853."

There was exhibited at the Meeting a modification of the model of a mounting for a large reflecting telescope, which had been proposed by the Astronomer Royal at the previous meeting, and of which a brief description was given in the last number of the *Monthly Notices*. In this altered form of the mounting, the polar bridle, instead of extending to the centre of the opening of the telescope, is attached to the back of the tube, by which means the

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quantity of framework at the mouth of the tube is considerably diminished. The end contemplated in making this alteration was to obviate any objections which might be urged against the contrivance on the ground of the loss of light, or the injurious effects of diffraction, occasioned by the apparatus of bars at the mouth of the tube: Mr. Airy himself, however, appeared to prefer the original form of mounting to this new modification of it.

On a Mounting for a large Reflecting Telescope.

By Mr. W. Simms, jun.

The Astronomer Royal having at the last meeting called the attention of the Society to a model of a form of mounting for a large reflecting telescope, and at the same time expressed a desire that something better might be devised, I venture to submit to the Society a plan for a similar purpose, which I believe to exhibit some improvements.

In the accompanying model, the turn-table or altitude and azimuth motion is similar to that employed by the Astronomer Royal; the azimuth motion being effected by the table turning upon a strong vertical spindle resting on a conical socket at the lower end; and the altitude motion by a short transverse axis on one side of the telescope. Upon the same side a semicircle is mounted, turning upon two pivots in the direction of its diameter, the centre intersecting the line of the transverse axis; this is the declination arc. A polar axis with the hour-circle at its upper end is carried by a polar support in the usual way, its lower end being the centre of the declination arc which turns there upon an axis: now if the declination arc is clamped to the polar axis, the motion of the instrument will be entirely governed by the clock-work acting upon the hour-circle, precisely as in an ordinary equatoreal instrument, and a considerable range of equatoreal motion obtained, extending to eight or nine hours on each side of the meridian, the motion being as much under control near the zenith as in the lower altitudes, which is one of the improvements intended to be pointed out.

Another arrangement shown in the model is that of the eye-piece, which is fixed to the side of the telescope, so that the observer will not be required to change his position, however great a change may take place in the position of the telescope. A prolongation of the longitudinal axis of the declination arc is connected by means of bevel wheel-work with the eye-tube which is made to rotate, so that the position of a wire in the field would correspond with the equatoreal motion of a celestial object, as in the case of the eye-piece devised by the Astronomer Royal, which is made to rotate through part of the circumference of the mouth of the telescope.